

REMARKS

Claim 1 is objected to due to a typographical error. Applicant has amended claim 1 to remedy the typographical error. Accordingly, it is respectfully submitted that this objection is now moot.

Claims 1 and 2 stand rejected under 35 USC 102(b) as being anticipated by US Patent Publ. No. 2002/0100605 to Ramarge et al. (hereinafter "Ramarge et al."). Claims 12-14 stand rejected under 35 USC 103(a) as being obvious over Ramarge et al. Applicant has amended the claims to more particularly distinguish the claims over the cited prior art.

More specifically, claim 1 has been amended to focus on the "patterned texture including an array of substructures selected from protuberances and concavities" being formed in the insulating material of the shank/shed. Basis for this amendment may be found on page 7, lines 11 to 13 of the present application. The cited prior art fails to teach or suggest these features.

Ramarge et al. discloses an insulator comprising a sheath having one or more sheds where both the sheath and sheds are coated with a first and a second hydrophobic coating. In Figures 4 and 5 of Ramarge et al., it is shown that markings on the surface of the sheath and one or more shed are caused by the non-continuous application of the second hydrophobic coating. Both the first and second hydrophobic coatings cause

beading of water on the surface so as to prevent or reduce the formation of paths for leakage currents or dry band arcs. The non-continuation of the second hydrophobic coating is a further means to break the path of water flow on the surface so as to prevent or reduce the formation of paths for leakage currents or dry band arcs.

In contrast, the invention of claim 1 includes a “patterned texture including an array of substructures selected from protuberances and concavities” that are **formed in the insulating material** of the shank/shed. In the preferred embodiment, the array of substructures provides a constant surface area along the structure (or a controlled variation of the surface area) in order to provide a substantially constant or controlled variation of leakage current density and surface electric field for a uniform conducting pollution layer at all points of the insulating structure. Therefore, localized areas of the insulating structure areas are not heated and thus do not form bands that may cause degradation of the structure over time.

Clearly, the teaching of Ramarge et al. (providing a surface texture by applying a non-continuous second hydrophobic coating over the outer surface of the shank/shed) differs from the invention of claim 1 whereby the patterned texture includes an “array of substructures selected from protuberances and concavities which are formed” in the insulating material of the shed/shank. Therefore, the patterned texture on the surface of the insulating structure is formed by the insulating material itself rather than by depositing an additional layer of material on the outer surface of the shaft and/or shed to form a patterned texture (as in the case of Ramarge et al.).

Furthermore, the arrangement of the "array of substructures selected from protuberances and concavities" that are formed in the insulating material of the shank/shed as recited in claim 1 permits the control of the longitudinal distribution of leakage current density and voltage gradient in a way not conceived in Ramarge et al. Moreover, it is respectfully submitted that there is no motivation to consult the document of Ramarge et al. in order to arrive at the claimed invention. Ramarge et al. deals with prevention of the flow of water on the surface of the insulating structure by distribution of a non-continuous hydrophobic coating. It is therefore submitted that the Examiner has improperly employed hindsight reasoning to modify the teachings of Ramarge et al. in order to arrive at the present invention.

For these reasons, it is respectfully submitted that amended claim 1 is patentable over the cited prior art.

The dependent claims are patentable over the cited art for those reasons advanced above with respect to claim 1 from which they depend and for reciting additional features that are not taught or suggested by the cited prior art.

For example, claim 13 recites that "said array of substructures that define said first outer surface of said shank is arranged such that the surface area of said first outer surface is substantially constant per unit length along the longitudinal direction of said shank." In another example, claim 14 recites that "said array of substructures that define

said first outer surface of said shank is arranged such that the surface area of said first outer surface has a defined variation per unit length along the longitudinal direction of said shank." Nowhere does the cited prior art teach or suggest these features. In rejecting claims 13 and 14, the Examiner asserts that these features are an obvious design choice but fails to provide any particular factual findings and/or concrete evidence to support this assertion, and thus has failed to establish a prima facie case of obviousness of these claims. Importantly, these features permit the control of the longitudinal distribution of leakage current density and voltage gradient and thus offer significant advantages over the cited prior art.

In light of all of the above, it is submitted that the claims are in order for allowance, and prompt allowance is earnestly requested. Should any issues remain outstanding, the Examiner is invited to call the undersigned attorney of record so that the case may proceed expeditiously to allowance.

Respectfully submitted,

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